filled with dirt, as they insist upon filling them in most operating rooms these days, for talcum powder to me is dirt even when cooked, and is not well taken care of by bone. Any piece of bone which I can not get into alignment, I cut off, whether on the upper, lower or middle part. I do not cut the Achilles tendon. Personally, I think it is bad surgery to cut any tendon unnecessarily, or to cut anything we do not replace, and I think fractures can always be brought into apposition just as well without, as with tenotomies. I agree with Dr. Levison, as I said at a meeting of another medical society, that the better the approximation, the less callus you get and the quicker the healing takes place, and the more still the bone is kept during the proper period, the quicker the union and better the result.

Dr. Levison: Concerning Dr. Hunkins' statement about the Esmarch bandage: In a paper that I presented two years ago I brought out the point that I did not think that under ordinary circumstances that the Esmarch was indicated; on the contrary I think it does harm, but just in this particular operation where the bone is so depressed and where alignment is difficult to obtain, in my opinion the Esmarch is indicated but it is the only fracture where it should be employed.

As far as tenotomy of the tendo Achilles is concerned I agree with Dr. Hunkin that I have never succeeded in accomplishing anything as a consequence of the tenotomy. I only advocate its employment because it has been suggested by others and not on account of any particular result that I have seen.

A PHYSICIAN'S VACATION.

By DOUGLASS W. MONTGOMERY, M. D., San Francisco.

It was urged recently in an editorial in this JOURNAL that every physician should take a holiday, else he might become a "stale" doctor: A stale medical man in these aseptic and bustling times would be a grave misfortune, especially to the "stale" one. Shortly before the appearance of the aforesaid editorial I, with my wife and daughter, went on a health-seeking expedition into the Sierra Nevadas, and behold some of the experiences that we underwent there.

We outfitted in Three Rivers, where we arrived on the noon of a very hot day after a long railroad, trolley and stage ride. We were advised to go up the Kaweah to Hockett Meadows and down through the National Forest to our point of departure. We had intended going into the Kings River Canyon, but were told that we would get good fishing and fine scenery along the Kaweah. We got the scenery but not the fishing.

We started with a bang. The store at Three Rivers has a stoop in front of it, the height of a wagon bottom, for the easy transference of goods. I noticed as I entered that there were a number of iron rods on this stoop, and made a mental comment that some of them might fall off. Shortly afterwards I heard a racket of falling iron and knew that the expected had come. The stage horses nearly ran away, and a moment afterwards our cook stepped into the store and said our mules had bolted, and one of them, with a box of eggs insecurely fastened on his pack, was peddling these up the road. The mule was gathered up, but not the eggs. Finally, as the afternoon was wearing late, our party, consisting of a packer, a cook, nine pack and saddle animals and our three selves, moved out with great expectations along a very dusty road. Alphonse Daudet in his delightful novels of Southern France continually remarks that sunshine, dust and the chirping of crickets are inseparable. If you will have sunshine he insists you must necessarily have dust, and the dust of California is of that fine impalpable nature that rises up in a golden cloud, and enters every little pore and crevice. I do not know a finer sight than a slowly moving ox team with their swaying gait, powerfully bent to a great load of logs, hauling it along a deep dusty road in the giant redwoods. The dust gives an indistinctness that accentuates the powerful lines of the picture. I do not think that our mules and pack animals developed quite such an impressive scene, but we made progress and finally arrived at a camping place beside a running stream. It was suggested to throw the tent across the stream in such a way as to make a bathing house. A bath in running water, just cool enough to be bracing, was just the proper thing to remove the dust and perspiration of the hot day, and the ache from the limbs unaccustomed to riding. Having a cook to prepare our meals was also a luxury. This cook made flapjacks, excellent ones, and these flap-jacks together with our appetite made a fine combination. After our meal and bath we turned in under the open sky as is the custom in California. One of the agonies of camping is sleeping on the hard ground. It is impossible to do away with all inequalities, and some stone or other is sure to insert itself between your ribs, and before morning you feel that the whole earth is coming up through your body. We had anticipated this, and had provided ourselves with air mattresses. These mattresses were the final and culminating point in our luxuries; like the cream to a strawberry. In getting them it is necessary to see that they have mattressed sides, else they are as hard to stay on as a Swiss bed.

There are very few sights in the world equal to awakening in the early morning under the blue sky. The retina has had its night's rest, and is especially sensitive, and it is an unutterable joy to look up into the deep blue vault. It is the time of day to appreciate what that most intellectual of peoples, the Greeks, meant when they made Pallas Athena the goddess of the upper ethereal air, and called the blue sky the eye of the goddess. The Greeks seem to have been more impressed with the beauties of nature than any other ancient people, and this is one of their finest touches. The next night we camped on a wooded platform overlooking the South Fork of the Kaweah. Myself and the packer went fishing, but as I was a tenderfoot, and as the stream was very rocky and my

knees were nearly twisted asunder by the unusual exercise of riding, I did not go very far up stream. It was possibly because of this and of my lack of art in fishing that I had no success, for the part of the stream whipped by me was in the neighborhood of a cavalry camp, and these young fellows had probably caught all there were to be had. The packer went further down stream and had better luck. This mess was the first and last caught during the whole trip.

The cavalrymen at this station were mostly boys, nice looking young fellows, and well equipped. The equipment and the horses are a standing credit to our government. The politeness and eagerness of the men to do everything they could for us was a trait common with them and with the other government employees we found in the park. The sergeant in charge was particularly proud of his arms, a good trait in a soldier, and he took great pains in showing the rifles, and anticipated great pleasure in the new Colt's Automatic .45 pistol they are shortly to receive. This large calibered pistol is an excellent change from the smaller calibered one. I first learned to appreciate a large calibered small arm when house surgeon in the old Chamber St. Hospital in New York. I there saw clearly that a small calibered arm was incapable of stopping a man suddenly. In close range work the stopping or stunning of a man is of the very first importance, and mass has more to do with bringing about this result than velocity.

One of the enjoyments of a mountain trip of this kind is the beautiful sweet water of the springs and rivers. We are accustomed to call such water pure. It is anything but pure, and this is the very point. Pure water is not alone disagreeable, but unhealthful because of osmosis. In order to be healthful and agreeable, water has to be impure enough to approach more the osmotic index of the body fluids than distilled or rain water does. It is now well known that pure water thrown into the circulation is a violent poison. One of the springs in Gastein is called the "Giftbrunnen," or poison spring, and on analysis it is found to be absolutely pure water. Natural ice, being pure, is harsher to the mucous membranes of the mouth and stomach than the more quickly frozen, somewhat salty artificial ice. I remember as a boy how it pained my lips and tongue to suck such icicles. The water of mountain streams contains many salts, and the slimes from the water dwelling animals and plants. It has still another quality not possessed by distilled water. By tumbling over the rocks it is well mixed with oxygen that gives it an agreeable liveliness. Such water is very healthful, and it is well that it is so, considering the huge quantities drunk by an office man on going green into the mountains. This elimination of water in summer in this region is for the most part insensible, because the clear, dry, atmosphere favors evaporation from the skin and from the lungs. In fact I look upon skin and lung elimination as among the chief recommendations of the Sierra Nevadas as a health trip. As water is the medium of chemic exchange in the body, this active absorption and elimination of water must most beneficially accelerate the chemistry of the tissue changes. The old meaning of the word catharsis was purification, and Aristotle used it in this sense even in reference to purification of the mind. This diaphoretic and respiratory catharsis is a most efficient purifier and has the additional advantage of relieving the other emunctories.

Among all the ministering angels that surround us cooks are the most curious tempered, and ours was no exception to the rule. I once heard a man undertake to prove there is a back door to Hell. On being asked to produce his reason he said, "How else could our cook have escaped?" The incident that finally separated our cook from our happy family was the stretch from Hockett's Meadow into the Little Kern Valley. The usual route between Hockett's Meadow and Mineral King is uninteresting, and we were advised, for the sake of the scenery, to go by way of the Little Kern Valley and Farewell Gap. The scenery justified for us the discomfort, and the view from the summit, on the one hand down the Little Kern, and on the other toward Mineral King is one of the finest, but the cook did not see it in that light, and it was a case of: "You tak' the low road, and I'll tak' the high road."

We had an experience before reaching Mineral King very instructive to one camping in these mountains. It is convenient and agreeable to camp beside a stream, and besides in the bottom of the canyons there are so many cozy looking nooks, that are not so cozy as they appear. In the evening and in the fore part of the night these places are often comfortably warm, but toward morning the cold air from the snow-clad mountains pours down the steep canyons like water in a trough, and chills to the bone. This peculiarity of the Sierra Nevadas must be reckoned with, and therefore the correct thing is to camp up on the side hill or on the promontories. I knew this, but the place in question looked so inviting, and was so handy to the water that we determined to pitch or rather inflate our beds there. I awakened during the night with my feet as cold as stone, and my left knee as painful as a toothache. I mentioned this to the packer next morning, and he said he noticed we went down there, but did not say anything about it. This is characteristic of the mountaineer; unless under very special circumstances he will venture no advice.

It was in this neighborhood in crossing Farewell Gap, one of the highest points of our journey, that I noticed the evolution of a familiar effect of light on the skin.

Light has a powerful effect on the skin in producing sunburn, or even true eczema solare, and also a curious disease called seborrheic keratosis. Seborrhea of the skin is a predisposing, but not essential cause of this latter affection. Shortly after crossing Farewell Gap I noticed on the back of my hands, which, of course, had begun to tan, a few little, red, freckle-sized lesions. These little red patches indicated groups of epithelial cells that were more impressionable to light than those of the rest of the back of the hand. On observing

this I was careful to wear gloves, and the little red patches gradually died down and became pigmented, looking like ordinary freckles. If the strong light should continue, however, and if the skin is markedly seborrheic, these patches may not return to the normal, but may persist in being more actively desquamating, and furthermore the desquamating scales tend to adhere to one another, forming corneous masses. These masses are harder and more adherent on the back of the hand than on the face, but wherever they occur they have a tendency to degenerate into epithelioma; this degenerative tendency is more marked on the face than on the hands.

The day before this, while in Bullion Camp on the Little Kern, two men, each carrying a rifle, strolled up the trail. One of them wore gloves, the other had a well developed, roughened, chronic, sunlight erythema of the back of the hands, that was well thrown into relief as he held the rifle in the natural strong grip of the hunter, for they were real mountaineers and old friends of the packer. The detrimental effect of light in his case had gone very far, and probably had affected not alone the superficial epithelium, but even the connective tissue portion of the skin where it causes severe degeneration, especially of the elastic fibres that under its influence disappear. The light of the high mountains, because of being very rich in actinic rays, is much more active in causing this degeneration than that of the sea level. As the light travels down through the atmosphere the short, chemic, actinic rays are much more rapidly absorbed than the longer red rays of the heat end of the spectrum. This richness in actinic rays of light at high altitudes is the reason why snow burn in the mountains is so much more severe than at lower levels.

Sunlight has still another important effect on the skin. It stimulates its pigment-forming function. This great function is frequently undervalued and looked upon as a mere effort on the part of the skin to protect the cells from the detrimental effects of the sun's rays. The pigment certainly does protect the cells and especially their nucleus, but it may have still another great function. The pigment of the skin is almost entirely formed in the stratum germinativum, and as the cells of this layer advance in their natural evolution toward the surface, they lose their pigment, even before they reach the stratum granulosum, and they have still a considerable distance to go before they are cast off as the scurff layer. That is to say, the pigment is formed in the lowermost, youngest, epithelial cells of the skin where the cells are at the highest stage of secretory effectiveness, and is lost long before these cells have completed their life cycle. Is the pigment, therefore, an internal secretion of the skin gland, and if so, where does this secretion go after leaving the skin? Is it absorbed, and does it go to form hemoglobin? And if so is the formation of blood pigment like the formation of chlorophyll dependent upon the action of sunlight, as is maintained by Driesing?

A friend of mine, Fairfax Whelan, stoutly maintains that the only reason why the Aryans have surpassed the other races is that they were originally a pastoral people, going with their herds and flocks to the highlands in summer, and returning to the lowlands in winter, and therefore getting the wide range of physiologic experiences that difference in altitude and therefore in air pressure grants. It would be additionally interesting if it is found that the richness of the mountain sunshine in actinic rays, by acting on the pigment-forming function, and therefore on the hemoglobin, also tends toward physiological perfection. If this surmise that the pigment of the blood arises in the pigment of the skin, and that it represents a sort of concrete sunshine should be true, then the skin will take a loftier place in the hierarchy of organs than it has heretofore occupied. Physicians tend to regard the skin as a coat or envelope to percuss or palpate through in an effort to guess at what is going on in what are considered the nobler organs, and surgeons esteem it as a sort of leathery case to puncture or cut through in order to reach the juicier deposits beneath. It may, however, transpire that the despised skin, that is seldom looked at by the anatomist, and that is dismissed by the physiologist at the end of the term together with the benediction, may be among the noblest of all the organs, and may be intimately connected with the formation of hemoglobin, and therefore with the assimilation of oxygen, that most important of all the functions of animal life.

Finally, we come to a consideration of the mules that were such a help to us on our trip. I learned much from those mules. In fact I do not see how a man can handle patients or practice medicine successfully without a knowledge of mules, for the mule and the patient have much in common. The mule is often narrow mindedly insistent on his own way of doing things, and so often are patients. Mules kick, and so do patients. You cinch a mule, and it is sometimes necessary to apply that process to a patient. Even the word "cinch" has a long and honorable history in medicine. Cinch is from the Spanish cincher, which is the Latin cingulum, a girdle. Cingulum is the name of the monk's girdle, emblematic of the encircling church. And from the Latin cingulum we get the medical word "shingles," or the girdle disease, as applied to herpes zoster. There may be a mystic meaning in the monastic word cingulum, but there is no mysticism about the word cinch as applied to a mule's cinch strap, or of shingles as applied to herpes zoster. Both of them are concrete realities, and occasionally also we meet with the real thing in dealing with a patient.

Many of the truly greatest, most contemplative and wisest of the human kind have become intimately acquainted with the jackass tribe, as for instance Sancho Panza, and also Robert Louis Stevenson, as related in his Travels on a Donkey. Occasionally in dealing with a patient it is necessary to be as firm as a cinch strap, as spiritually wise and kind as Robert Louis Stevenson, and as worldly wise and free from illusions as Sancho Panza.